

### ABSTRACT OF THE DISCLOSURE

Gene signatures associated with electroconvulsive therapy (ECT) and/or electroconvulsive seizures (ECS) are disclosed. Such “signatures” are useful, *e.g.*, for  
5 diagnosing and treating neuropsychiatric disorders such as major depressive disorder (MDD), bipolar affective disorder (BAD) and psychotic depression. Such methods are therefore also provided here. The invention additionally provides screening methods that use gene signatures of the invention to identify new therapeutic compounds for treating these disorders.